

03-28-02

10/089271

Rec'd PCT/PTO 26 MAR 2002

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Docket No. F-7322

Filing Date: March 26, 2002

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Washington, D. C. 20231

☐ ATTN: BOX PATENT APPLICATION

☐ ATTN: BOX DESIGN PATENT APPLICATION

☒ ATTN: BOX PCT

☐ ATTN: BOX PROVISIONAL PATENT APPLICATION

☒ THIS IS THE 35 U.S.C. 371 NATIONAL STAGE OF PCT/EP00/07214 FILED

July 27, 2000

Sir:

Transmitted herewith for filing is the ☒ Utility ☐ Design ☒ nonprovisional ☐ provisional patent application of:

Inventor / Application Identifier: Thomas NIEHR, et al.

☒ See Inventor Information Sheet attached

For: **METHOD FOR STERILIZING PET BOTTLES**

☐ This is a new patent application.

☒ This is the 35 U.S.C. 371 National Stage Application of the above-identified PCT Application.

☐ This is a provisional patent application.

☐ This is a: ☐ Continuation Application

☐ Divisional Application

☐ Continuation-in-Part Application

of prior Application Serial No.

☐ Cancel in this application original claims of the prior application before calculating the filing fee.

☐ Amend the specification by inserting before the first line the sentence:

-- This is a ☐ Continuation, ☐ Divisional, ☐ Continuation-in-part, of Application

JC15 Rec'd PCT/PTO 26 MAR 2002

3. Incorporation By Reference The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

ENCLOSED ARE THE FOLLOWING:		
X	1	Sheets of drawings ([x] formal [ ] informal size A4 ).
X	10	Pages of specification including abstract and claims.
X	11	Total pages.
Combined Declaration and Power of Attorney		
		Newly executed
		Copy from prior application
		Inventors deleted; see attached statement
Sequence Listing		
		Computer Readable Copy
		Paper copy
		Statement verifying identity of above copies
X		Return Receipt Postcard
		Preliminary Amendment
		Assignment to.
		Assignment is of record in prior application Serial No _
		Assignment Recordation Form Cover Sheet
		Charge \$40 00 to Deposit Account No. 10-1250 for recording Assignment.
		Information Disclosure Statement
		Information Disclosure Citation
		English translation
X		Application Data Sheet

1. CLAIMS 512 P. 3. 03/03/02  
10/08' 271

JC15 Rec'd PCT/PTO 26 MAR 2002

PRIORITY CLAIMS	
	Applicant hereby claims the benefit of the filing date of the following provisional application(s) under the provision of 35 USC 119.
X	Applicant hereby claims the benefit under the provisions of 35 USC 119 of the filing dates of the following applications as indicated below.  Germany Patent Appln. No. 199 49 692.7, filed October 15, 1999, Priority Claimed  of which certified copies thereof
	will follow
	are enclosed
X	have been filed in the International Bureau
	were filed in prior application:

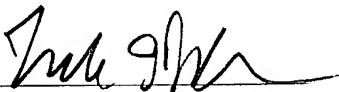
CLAIMS FILED AND FILING FEE CALCULATION					
ITEM				Rate	Applied Fee
[ ] Base Fee - Non PCT				\$740	
[ ] Base Fee - PCT IPEA-US	-			\$710	
[ ] Base Fee - PCT ISA-US				\$740	
[ ] Base Fee - PCT not ISA or IPEA				\$1,040	
[X] Base Fee - PCT with EPO or JPO Search Report				\$890	\$890
[ ] Base Fee - Design				\$330	
[ ] Base Fee - Provisional				\$160	
Claim Fees	Number Filed	Base Number	Number Extra over Base		
Total Claims	1	20	0	\$18	\$0
Independent Claims	1	3	0	\$84	\$0
Multiple Dependent Claim Fee				\$280	\$0
[ ] Small Entity Status is Asserted					(\$0)
[ ] Foreign Language Filing Fee				\$130	\$0
TOTAL FILING FEE					\$890

10/08/2011

JC15 Rec'd PTO 26 MAR 2011

- ☒ Please charge Deposit Account No 10-1250 in the amount of the above TOTAL FILING FEE. A duplicate copy of this sheet is attached.
- ☒ Please charge to Deposit Account No 10-1250 any further fees due for filing or during prosecution of this application under 37 CFR 1.16, 37 CFR 1.17, and 37 CFR 1.492
- ☐ Copy of the cover page of International Publication (WO 01/28863)
- ☐ Copy of the German PCT/IPEA/409 form.
- ☒ When all the requirements for a national stage application have been completed, applicant is notified (Form PT/DO/EO/903) of the acceptance of the application under 35 U.S.C. 371, including an itemized list of the items received. The itemized list includes an indication of whether a copy of the international search report and copies of the references cited therein are present in the national stage file. The examiner will consider the documents cited in the international search report, without any further action by the applicant under 37 CFR 1.97 and 1.98, when both the international search report and copies of the documents are indicated to be present in the national stage file. The examiner will note the consideration in the first Office action. There is no requirement that the examiners list the documents on a PTO-892 form. See Form Paragraphs 6.53, 6.54, and 6.55 (reproduced in MPEP § 609).

JORDAN AND HAMBURG LLP

By   
 Frank J. Jordan  
 Reg No 20,456  
 Attorney for Applicants

**DECLARATION TO FOLLOW**



PTO/PCT Rec'd

03 SEP 2002

10/089,271 . 090-573

F-7322

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Thomas NIEHR et al.  
Serial No. : 10/089,271  
Filed : March 26, 2002  
For : METHOD FOR STERILIZING PET BOTTLES  
Group Art Unit : (Not yet known)  
Examiner : (Not yet known)

Certificate of Mailing Under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to ASSISTANT COMMISSIONER FOR PATENTS, WASHINGTON, DC 20231 on August 26, 2002.

Frank J. Jordan  
(Name)

(Signature and Date)

08/26/02

Assistant Commissioner  
for Patents  
Washington, D.C. 20231

PRELIMINARY AMENDMENT (A)

Sir:

Preliminary to examination, please amend this application as follows:

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Serial No. 10/089,271

**IN THE SPECIFICATION:**

Please replace indicated paragraphs of the specification with replacement paragraphs presented indicated below. Appendix II is attached hereto having marked versions of said indicated paragraphs with amendments indicated by brackets and underlining.

Page 1:        between the title and the 1<sup>st</sup> full paragraph, insert the following heading:

**BACKGROUND OF THE INVENTION:**

                 between the 2<sup>nd</sup> and 3<sup>rd</sup> full paragraph, insert the following heading:

**SUMMARY OF THE INVENTION:**

Page 2:        2<sup>nd</sup> full paragraph, change to read as follows:

Further details and effects of the object of the invention arise from of the following description and the accompanying drawings.

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between the 2<sup>nd</sup> and 3<sup>rd</sup> paragraph, insert the following paragraphs:

**IN THE DRAWINGS:**

Fig. 1 illustrates the periodic passage of groups of bottles through a sterilization station.

### DESCRIPTION OF THE PREFERRED EMBODIMENTS:

F-7322

Serial No. 10/089,271

**IN THE CLAIMS:**

Please amend the claims as shown re-written below with amendments effected therein. Appendix I is attached hereto having marked versions of said claims with amendments indicated by brackets and underlining.

3. (Amended) The method of claim 1, wherein the peroxide aerosol, before it is introduced into the bottles, is heated to a temperature of about 60° to 90°C and preferably of about 70° to 80°C as the starting temperature for the sterilization.

4. (Amended) The method of claim 1, wherein the peroxide aerosol, before it is blown into the bottles, is introduced into flowing sterile air, which has been heated to an activation temperature and heated by the latter to the sterilization starting temperature on the way to the interior of the bottles.

5. (Amended) The method of claim 1, wherein the peroxide aerosol and the sterile air are kept separate until they enter the interior of the bottles.





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10. (Amended) The method of claim 1, wherein, after sterile air heated to the activation temperature has been blown in, sterile air, which has been heated to a lower temperature, is blown in in subsequent, separate processes.

12. (Amended) The method of claim 1, wherein the sterile air, which has been heated to the activation temperature, is blown at the rate of about 25 to 30 m/s and preferably of about 28 m/s into the interior of the bottles.

13. (Amended) The method of claim 1, wherein the sterile air is blown in at a lower temperature with a flow rate of about 70 to 90 m/s and preferably of about 80 m/s into the interior of the bottles.

14. (Amended) The method of claim 1, wherein sterile air is blown in over a period of 1 to 3 seconds and preferably of about 2 seconds.

15. (Amended) The method of claim 1, wherein about 0.15 ml of peroxide per 100 cm<sup>2</sup> of interior surface of the bottles is introduced into the latter.

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**REMARKS**

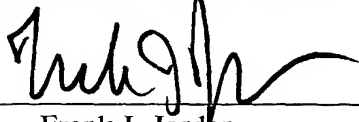
This Preliminary Amendment is being submitted to avoid having a multiple dependent claim depend on another multiple dependent claim.

The specification is amended to correct various typographical, grammatical and idiomatic informalities, and to place the application into proper conformance with U.S. patent practice.

It is respectfully requested that the first Official Action be directed to the application as amended herein.

Respectfully submitted,

JORDAN AND HAMBURG LLP

By 

Frank J. Jordan  
Reg. No. 20,456  
Attorney for Applicants

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New York, New York 10168  
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FJJ/cj  
Enc.

Appendix I (Amended Claims with Amendments Indicated  
Therein by Brackets and Underlining)

Appendix II (Amended Specification Paragraphs with  
Amendments Indicated Therein by Brackets and Underlining)

## APPENDIX I

AMENDED CLAIMS WITH AMENDMENTS INDICATED THEREIN  
BY BRACKETS AND UNDERLINING

3. (Amended) The method of [claims 1 or 2] claim 1, wherein the peroxide aerosol, before it is introduced into the bottles, is heated to a temperature of about 60° to 90°C and preferably of about 70° to 80°C as the starting temperature for the sterilization.

4. (Amended) The method of [one of the claims 1 to 3] claim 1, wherein the peroxide aerosol, before it is blown into the bottles, is introduced into flowing sterile air, which has been heated to an activation temperature and heated by the latter to the sterilization starting temperature on the way to the interior of the bottles.

5. (Amended) The method of [one of the claims 1 to 3] claim 1, wherein the peroxide aerosol and the sterile air are kept separate until they enter the interior of the bottles.

6. (Amended) The method of [one of the claims 1 to 5] claim 1, wherein the introduction of peroxide aerosol into the interior of the bottles is carried out in at least two separate, consecutive steps.

7. (Amended) The method of [one of the claims 1 to 6] claim 1, wherein, following the blowing in of peroxide aerosol, at least one pause in the action, corresponding to at least one conveying cycle of the bottles, precedes the blowing of sterile air, heated to the activation temperature, into the interior of the bottles.

8. (Amended) The method of [one of the claims 1 to 7] claim 1, wherein sterile air is blown in in at least two separate steps, corresponding in each case to one conveying cycle of the bottles.

9. (Amended) The method of [one of the claims 1 to 8] claim 1, wherein the sterile air is heated to an activation temperature of about 90° to 120°C and preferably of about 110°C.

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10. (Amended) The method of [one of the claims 1 to 9] claim 1, wherein, after sterile air heated to the activation temperature has been blown in, sterile air, which has been heated to a lower temperature, is blown in in subsequent, separate processes.

12. (Amended) The method of [one of the claims 1 to 11] claim 1, wherein the sterile air, which has been heated to the activation temperature, is blown at the rate of about 25 to 30 m/s and preferably of about 28 m/s into the interior of the bottles.

13. (Amended) The method of [one of the claims 1 to 12] claim 1, wherein the sterile air is blown in at a lower temperature with a flow rate of about 70 to 90 m/s and preferably of about 80 m/s into the interior of the bottles.

14. (Amended) The method of [one of the claims 1 to 12] claim 1, wherein sterile air is blown in over a period of 1 to 3 seconds and preferably of about 2 seconds.

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15. (Amended) The method of [one or more of the claims 1 to 14] claim 1, wherein about 0.15 ml of peroxide per 100 cm<sup>2</sup> of interior surface of the bottles is introduced into the latter.

**APPENDIX II****AMENDED SPECIFICATION PARAGRAPHS WITH AMENDMENTS  
INDICATED THEREIN BY BRACKETS AND UNDERLINING**

Page 1:        between the title and the 1<sup>st</sup> full paragraph, insert the following heading:

**BACKGROUND OF THE INVENTION:**

              between the 2<sup>nd</sup> and 3<sup>rd</sup> full paragraph, insert the following heading:

**SUMMARY OF THE INVENTION:**

              4<sup>th</sup> full paragraph, delete in its entirety:

[        The inventive method is accomplished by the distinguishing features of claim 1. For further developments, reference is made to claims 2 to 15.]

Page 2:        2<sup>nd</sup> full paragraph, change to read as follows:

Further details and effects of the object of the invention arise [out] from of the following description [of the course of, the method by means of a sketch, which illustrates the periodic passage of groups of bottles through a sterilization station of the inventive type.] and the accompanying drawings.



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between the 2<sup>nd</sup> and 3<sup>rd</sup> paragraph, insert the following paragraphs:

**IN THE DRAWINGS:**

Fig. 1 illustrates the periodic passage of groups of bottles through a sterilization station.

**DESCRIPTION OF THE PREFERRED EMBODIMENTS:**

TO/PCT Rec'd

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F-7322



### METHOD FOR STERILIZING PET BOTTLES

The invention relates to a method in which a sterilizing agent is used to sterilize bottles of a temperature-sensitive plastic, especially PET bottles, which are being advanced along a conveying path periodically.

It is known that bottles of a temperature-insensitive material, such as glass, can be sterilized by introducing peroxide into the interior of the bottles at a temperature, at which the peroxide splits off oxygen immediately after it is introduced into the bottle, the oxygen bringing about the sterilizing action. In the case of bottles of a temperature-sensitive material such as PET, it is not possible to carry out such a sterilization method, because the walls of the bottles reach a temperature above a still permissible limiting temperature of, for example, 55°C.

The invention is concerned with the problem of providing a method of the type mentioned above, which permits even temperature-sensitive bottles to be sterilized with the help of peroxide as sterilizing agent and, at the same time, can be carried out easily and rapidly within a short, conveying distance.

The inventive method is accomplished by the distinguishing features of claim 1. For further developments, reference is made to claims 2 to 15.

The inventive method enables bottles to be sterilized with the help of a peroxide fog, which is blown into the bottles for briefly forming a condensate on the inner surface of the bottles, the peroxide, as a result of being heated to a temperature, at which sterilization commences, already being at a stage, at which a certain portion of it is converted into the gaseous form already upon being introduced into the bottles. By blowing in sterile air at a temperature, at which the peroxide is activated, the latter is activated while, at the same time, the condensate film is removed by the oxygen splitting off, the sterilization is brought about and, subsequently, the peroxide, together with the remaining components, is blown out of the interior of the bottles. During these processes, the temperature of the walls does not exceed a value of 55°C, so that the sensitive material of the bottles, such as PET bottles, is not affected.

Further details and effects of the object of the invention arise out of the following description of the course of, the method by means of a sketch, which illustrates the periodic passage of groups of bottles through a sterilization station of the inventive type.

In particular, the drawing diagrammatically shows a sterile chamber 1, which forms a spraying-in space 2, a first sterile space 3 and a sterile space 4, through which in each case groups of, for example, bottles 8 pass aligned consecutively in the plane of the drawing. At the same time, the bottles 8 are supported in bottle carriers 5, which have a beam shape and are conveyed by means of a conveyor 6, which is indicated only diagrammatically by a line of dots and dashes, horizontally in the direction of the arrow

7. The conveying takes place in time, the groups of bottles in each case passing through stationary positions labeled 10 to 19. It is self-evident that there may be further positions before position 10 and further positions after position 19, in which the bottles are acted upon, for example, by preceding rinsing drying processes and subsequent filling and sealing processes.

In position 11, heated peroxide aerosol is blown with the help of a lance 20 into the bottles 8 of temperature-sensitive plastic, especially PET bottles. Together with its supplying line 21, the lance 20 can be moved in the direction of arrow 9 out of an upper starting position into the lower operating position, which is not shown, with the help of a driving mechanism, the details of which are not shown. The supplying line 21 leads to a peroxide aerosol generator, which is not shown and, which generates peroxide aerosol under pressure and, when the lance 20 is lowered, blows the peroxide or  $H_2O_2$  fog into the interior of the bottles 8. The peroxide oxide fog, introduced into the bottles 8 over the lances 20, has a sterilization starting temperature of about  $60^\circ$  to  $90^\circ C$  and preferably of about  $70^\circ$  to  $80^\circ C$ , at which a certain portion of the  $H_2O_2$  already changes over into the gaseous form, oxygen being split off. Nevertheless, the temperature is so low that, even if the same process is repeated in position 12, the walls of the bottles 8 do not experience any heating, which comes close to a dangerous limiting temperature of, for example,  $55^\circ C$ , during the formation of a condensate film on the inside of the bottles 8.

After this two-step introduction of peroxide aerosol into the bottles 8, the latter pass from the spraying-in space 2 of the sterile chamber 1 into the first sterile chamber 3, which, like the sterile chamber 4, is constructed lower. The bottles 8, into the inside of which aerosol has been sprayed, remain in the two positions 13 and 14 in the first sterile space 3 without being acted upon further from the outside. After that, they are transferred into position 15, where they are acted upon with sterile air through a lance 22 which, together with its supplying line 23, can be lowered in the direction of arrow 9 also from an upper starting position into the operating position shown and vice versa.

This sterile air, blown in in positions 15 and 16, has an activation temperature of about 90° to 120°C and preferably of about 110°C and causes the condensate film on the inner surface of the bottles to be evaporated. This process of evaporating the aerosol condensate film is divided into two steps in positions 15 and 16 and terminated only in position 16, in which the same process of blowing in sterile air, heated to the activation temperature, is repeated. The sterile air, heated to the activation temperature, is blown in only briefly during a period of about 1 to 3 seconds and preferably of 2 seconds, at a flow rate of about 25 to 30 m/s and preferably of about 28 m/s. In spite of the heat content of the sterile air, heated to the activation temperature, the wall of the bottles 8, even in positions 15 and 16, remains within a temperature range below the limiting temperature of about 55°C.

In order to drive out residues of peroxide from the interior of the bottles 8 and to dry the inner wall of the bottles reliably, sterile air is blown in once again in positions 17 and 18, however at a lower temperature, in order to avoid also into these two positions that the limiting temperature of the walls of the bottle is reached. This reduced temperature of the sterile air in positions 17 and 18 is about 75° to 85°C and preferably about 80°C and is blown in with a flow rate of about 70 to 90 m/s and preferably of about 80 m/s into the interior of the bottles and, moreover, also once again for a period of only about 1 to 3 seconds and preferably also of about 2 seconds. The sterile air of reduced temperature admittedly brings about an effective expulsion of peroxide residues and a reliable drying of the interior of the bottles 8. However, it also avoids a transfer of heat to the bottles 8 to an extent, which could bring about heating of the walls of the bottles above the limiting temperature. As in positions 11 and 12 or 15 and 16, the sterile air is blown in with the help of a lance 24, which is connected with a supplying line 25 and, together with the latter, can be moved in the direction of the arrow 9 from an upper starting position downwards into the lower operating position shown and vice versa. The lances 20 in the positions 11 and 12, 22, in the positions 15 and 16 and 24 and in the positions 17 and 18 can be moved up and down in each case by means of one and the same driving mechanism.

When the blowing of sterile air into the bottles 8 in position 18 is stopped, the sterilization process is concluded. After leaving position 18 and the sterile space 4, the

bottles go over into position 10 and the following positions into, for example, a further sterile space, in which the bottles are filled and the filled bottles are sealed.

The amount of aerosol used, which preferably is fogged at ambient temperature and heated to the starting temperature for the sterilization only on the way to the lances 21, depends on the size of the bottles and preferably is about 0.15 ml of peroxide per 100 cm<sup>2</sup> of inner space surface of the bottles 8.

In principle, it is possible to blow in peroxide aerosol in a single step, for example, in position 11, and to shorten the processing pause to one step, such as in position 13. The blowing-in processes can also take place, in each case, in a single step, for example, in positions 15 and 17. However, with regard to the course of the transfer of heat to the walls of the bottles, it is more advantageous to divide the blowing-in processes among several steps, in order to avoid an increase in temperature to the limiting temperature. In principle, instead of two steps, more than two steps can also be provided for blowing in peroxide aerosol and for the processing pause and for blowing in sterile air. However, this is associated with a prolongation of the sterilization time and distance, which causes correspondingly higher costs.

[illegible]



## Claims

1. A method, in which a sterilizing agent is used to sterilize bottles of a temperature-sensitive plastic, especially PET bottles, which are being advanced along a conveying path periodically, wherein a peroxide aerosol, heated to the starting temperature of the sterilization, is blown into the interior of the bottles and a peroxide condensate film is formed on the inner wall of the bottles, and subsequently sterile air, with an activation temperature exceeding the sterilization starting temperature of the peroxide aerosol, is blown into the interior of the bottles, until the aerosol condensate has evaporated, after which residues of peroxide are expelled from the interior of the bottles by the renewed blowing in of sterile air.

2. The method of claim 1, wherein the peroxide is fogged into an aerosol at ambient temperature and heated to the starting temperature of the sterilization on the way to the interior of the bottles.

3. The method of claims 1 or 2, wherein the peroxide aerosol, before it is introduced into the bottles, is heated to a temperature of about 60° to 90°C and preferably of about 70° to 80°C as the starting temperature for the sterilization.

4. The method of one of the claims 1 to 3, wherein the peroxide aerosol, before it is blown into the bottles, is introduced into flowing sterile air, which has been heated to an activation temperature and heated by the latter to the sterilization starting temperature on the way to the interior of the bottles.

5. The method of one of the claims 1 to 3, wherein the peroxide aerosol and the sterile air are kept separate until they enter the interior of the bottles.

6. The method of one of the claims 1 to 5, wherein the introduction of peroxide aerosol into the interior of the bottles is carried out in at least two separate, consecutive steps.

7. The method of one of the claims 1 to 6, wherein, following the blowing in of peroxide aerosol, at least one pause in the action, corresponding to at least one conveying cycle of the bottles, precedes the blowing of sterile air, heated to the activation temperature, into the interior of the bottles.

8. The method of one of the claims 1 to 7, wherein sterile air is blown in in at least two separate steps, corresponding in each case to one conveying cycle of the bottles.

9. The method of one of the claims 1 to 8, wherein the sterile air is heated to an activation temperature of about 90° to 120°C and preferably of about 110°C.

10. The method of one of the claims 1 to 9, wherein, after sterile air heated to the activation temperature has been blown in, sterile air, which has been heated to a lower temperature, is blown in in subsequent, separate processes.

11. The method of claim 10, wherein the lower temperature of the sterile air is about 75° to 85°C and preferably about 80°C.

12. The method of one of the claims 1 to 11, wherein the sterile air, which has been heated to the activation temperature, is blown at the rate of about 25 to 30 m/s and preferably of about 28 m/s into the interior of the bottles.

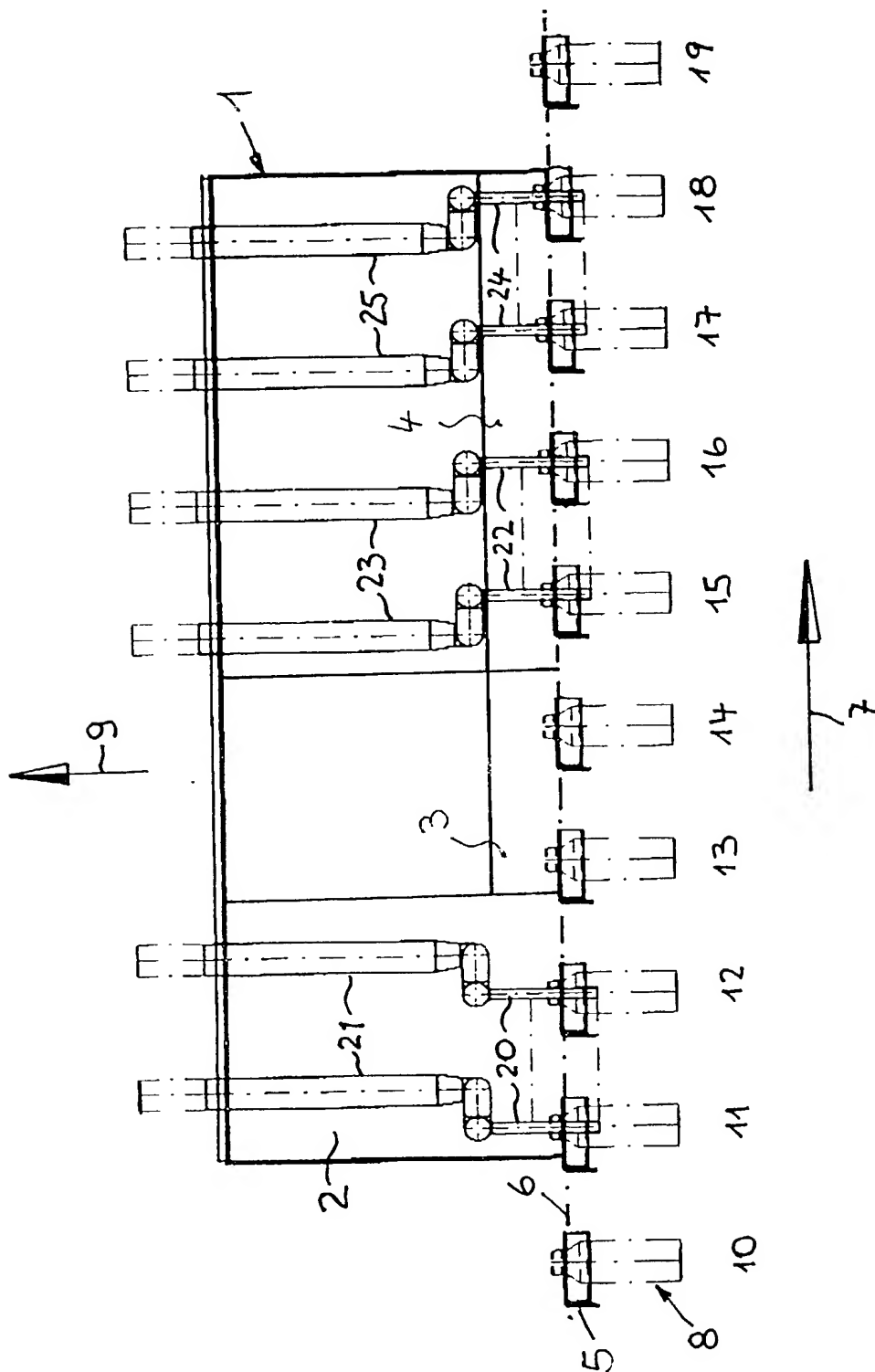
13. The method of one of the claims 1 to 12, wherein the sterile air is blown in at a lower temperature with a flow rate of about 70 to 90 m/s and preferably of about 80 m/s into the interior of the bottles.

14. The method of one of the claims 1 to 12, wherein sterile air is blown in over a period of 1 to 3 seconds and preferably of about 2 seconds.



# Abstract of the Disclosure

The method, in which a sterilizing agent is used to sterilize bottles of a temperature-sensitive plastic, especially PET bottles, which are being advanced along a conveying path periodically, provides that a peroxide aerosol, heated to the starting temperature of the sterilization, is blown into the interior of the bottles and a peroxide condensate film is formed on the inner wall of the bottles, and subsequently sterile air, with an activation temperature exceeding the sterilization starting temperature of the peroxide aerosol, is blown into the interior of the bottles, until the aerosol condensate has evaporated, after which residues of peroxide are expelled from the interior of the bottles by the renewed blowing in of sterile air.



**COMBINED DECLARATION FOR PATENT APPLICATION AND  
POWER OF ATTORNEY**

(Includes Reference to PCT International Applications)

Attorney's Docket Number  
**F-7322**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**METHOD FOR STERILIZING PET BOTTLES**

the specification of which (check only one item below):

- ☐ is attached hereto.
- ☐ was filed as United States application  
Serial No. \_\_\_\_\_  
and was amended  
on \_\_\_\_\_ (if applicable).
- ☒ was filed as PCT international application  
Number PCT/EP00/07214,  
on July 27, 2000,  
and was amended under PCT Article 19  
on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) or (f), §365(b) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119			
Country (if PCT indicate "PCT")	Application Number	Date of Filing	Priority Claimed Under 35 USC 119
Germany	199 49 692.7	October 15, 1999	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**COMBINED DECLARATION FOR PATENT APPLICATION AND  
POWER OF ATTORNEY (Continued)**  
(Includes Reference to PCT International Applications)

Attorney's Docket Number  
**F-7322**

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

C. Bruce Hamburg	Reg. No. <u>22,389</u>
Frank J. Jordan	Reg. No. <u>20,456</u>
Herbert F. Ruschmann	Reg. No. <u>35,341</u>
Jacqueline M. Steady	Reg. No. <u>44,354</u>
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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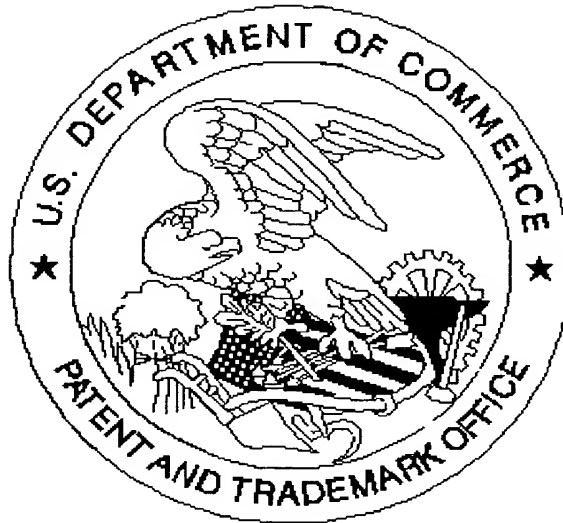


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